

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Single Current Independent Xitanium Dim 150W 0.7A 1-10V TWE I220

Xitanium LED-based light sources are an excellent solution for outdoor environment. They are long-lasting and require low maintenance. However, to get the best out of the LEDs, these light sources require highly reliable and efficient LED Drivers. The new Philips Xitanium Fixed Output and Dimmable (1-10V) LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Ultimate robustness and reliability secure the lowest luminaires maintenance overtime
- Long lifetime and high survival rate thanks to superior thermal management
- Consistent waterproof performance throughout the lifecycle
- Easy to design-in, based on extra EMI margin for independent use
- Compliance with IEC and UL standards, suitable for various markets
- Backed by 5 year warranty from a company you can trust

Features

- Proven robustness and reliable electronics driver design
- Achieving highest efficiencies based on advanced technology
- Extremely long lifetime, fitting with harsh outdoor applications
- Suitable for Class I isolated luminaires
- Authorized certificates: UL / CSA / CE / CCC / ENEC / CB

Application

- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	110...277	V _{ac}	
Rated input voltage	230	V _{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	0.75	A	@ 230 Vac input full load
Max. input current	1.5	A	@ minimum input voltage AC
Rated input power	170	W	@ full load
Power factor	> 0.95		@ full load
	> 0.92		@ 70% load
Total harmonic distortion	≤ 10	%	@ full load
Efficiency	> 91	%	@ 220 Vac input full load
Input voltage AC range	99...305	V _{ac}	Performance range
Isolation input to output	Basic		

Electrical output data

Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	90...214	V _{dc}	
Output voltage max.	300	V	Peak voltage at open load
Output current	0.07...0.7	A	Full output current setting
Output current min dimming	70	mA	
Output current tolerance	± 5	%	
Output current ripple LF	≤ 5	%	Ripple = peak/average < 1KHZ
Output current ripple HF	≤ 15	%	
Output power	7...150	W	Full output

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V		Output current amplitude dimming
Dimming range	10...100	%	Default range
Galvanic Isolation	Basic		

Logistical data

Specification item	Value
Product name	Xitanium Dim 150W 0.7A 1-10V TWE I220
Logistic code 12NC	9290 014 25880
Pieces per box	10

Wiring & Connections

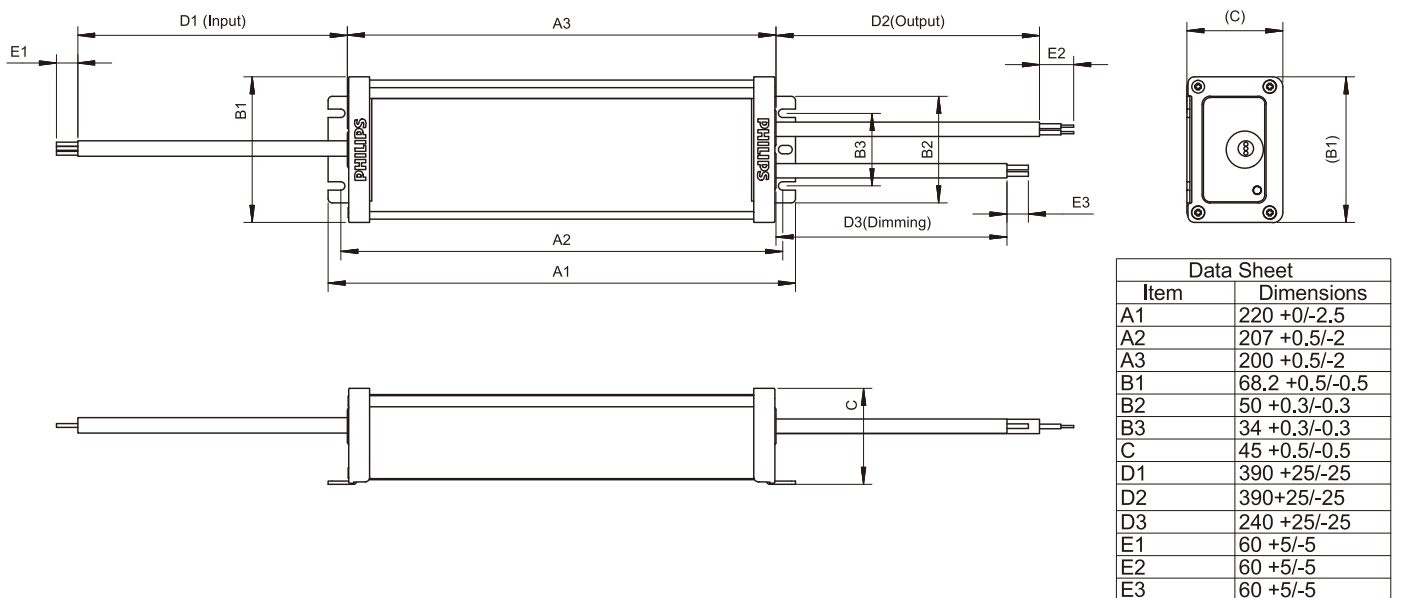
Specification item	Value	Unit	Condition
Input Wire Size	1.04	mm ²	3-wire cable; AWG17
Output Wire Size	1.04	mm ²	2-wire cable; AWG17
Input Wire Length	450 ± 30	mm	Out of enclosure and not including connector length
Output Wire Length	450 ± 30	mm	Out of enclosure and not including connector length
Dimming Wire Length	300 ± 30	mm	Out of enclosure and not including connector length

Insulation

Insulation	Mains	LED	1-10V	Housing
Mains		Basic	Basic	Basic
LED	Basic		Basic	Basic
1-10V	Basic	Basic		Basic
Housing	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	220	mm	
Width (B1)	68.2	mm	
Height (C)	45	mm	
Fixing hole diameter (D1)	4	mm	
Fixing hole distance (A2)	207	mm	
Weight	940	gram	



Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded.
T _{case-max}	85	°C	Maximum temperature measured at T _{case-point}
T _{case-cut off}	88	°C	Power to LEDs is reduced
Maximum housing temperature	90	°C	In case of a failure
Relative humidity	10...90	%	Non-condensing

* 5% output power less @110Vac, if reach to T_{c-max}.

Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+85	°C	
Relative humidity	5...95	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at T _{case-point} is T _{case-max} . Maximum failures = 10%

Programmable features

Specification item	Value	Remark	Condition
Set output current (AOC)	No	See Design-in guide.	Default output current: = 700 mA

Features

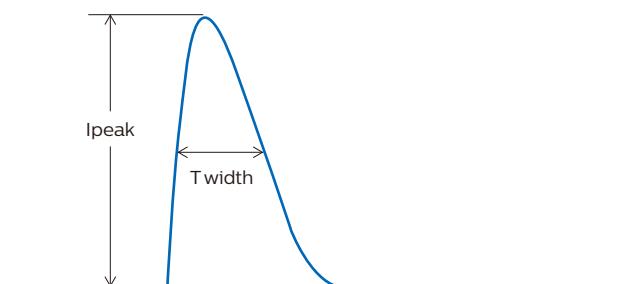
Specification item	Value	Remark	Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	I		per IEC60598
Over temperature protection driver	Yes		Automatic recovering

Certificates and standards

Specification item	Value
Approval marks	UL / CSA / CE / ENEC / CB / CCC
Ingress Protection classification	IP66 / 67

Inrush current

Specification item	Value	Unit	Condition
Inrush Current I_{peak}	35	A	Input voltage 230V
Inrush Current T_{width}	470	μs	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A Type B	≤ 7	pcs	



MCB	Rating	Relative number of LED drivers
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical touch current (ins. Class II)	< 0.7	mA peak	LED module contribution not included

Surge immunity

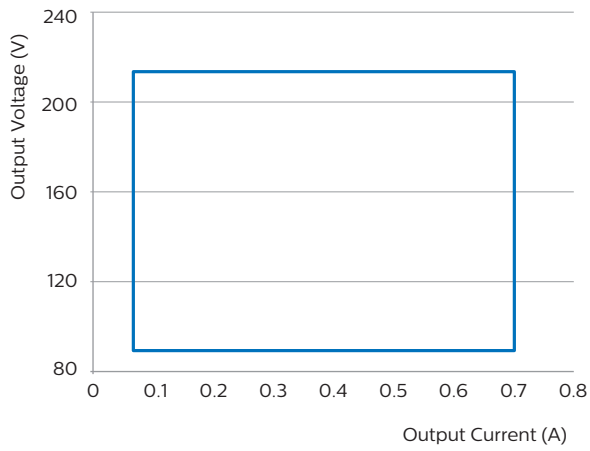
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5 & ANSI C62.41, 20hm
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5 & ANSI C62.41, 20hm

Additional information

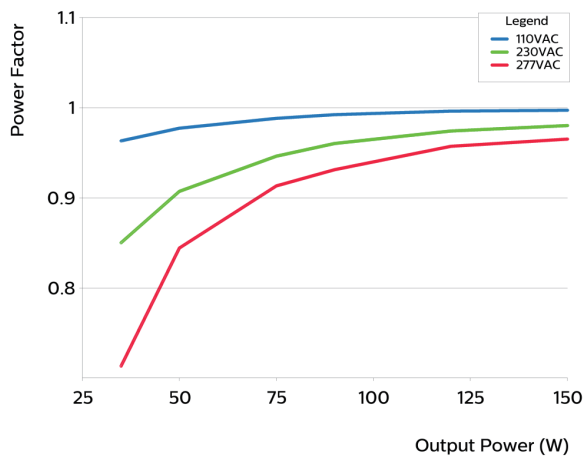
Specification item	Default setting	Remark	Condition
1-10V	ON		

Graphs

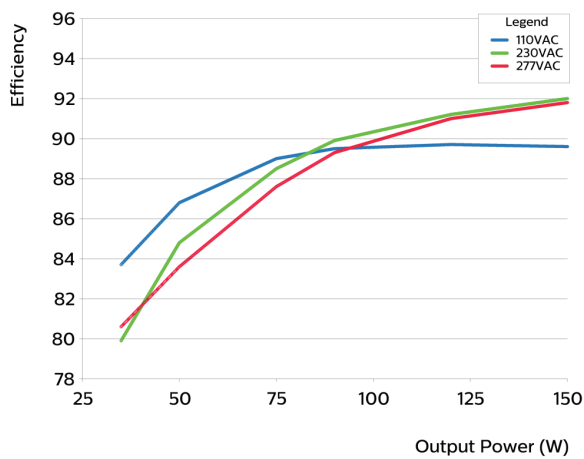
Operating window



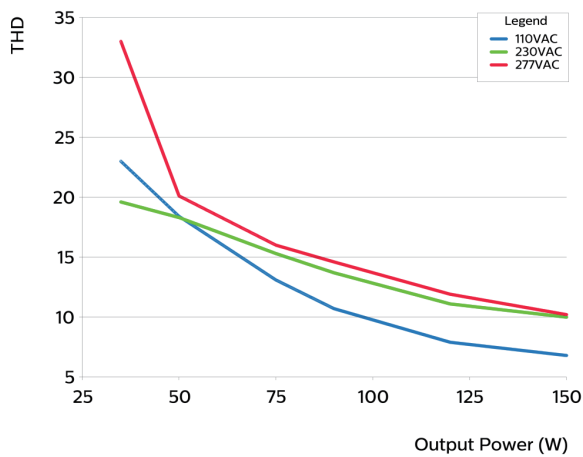
Power factor versus output power



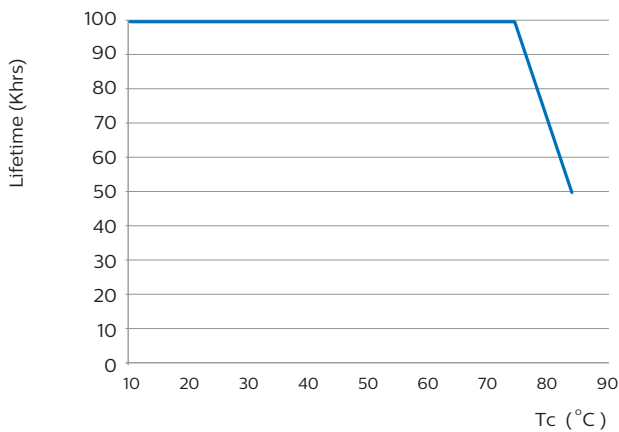
Efficiency versus output power



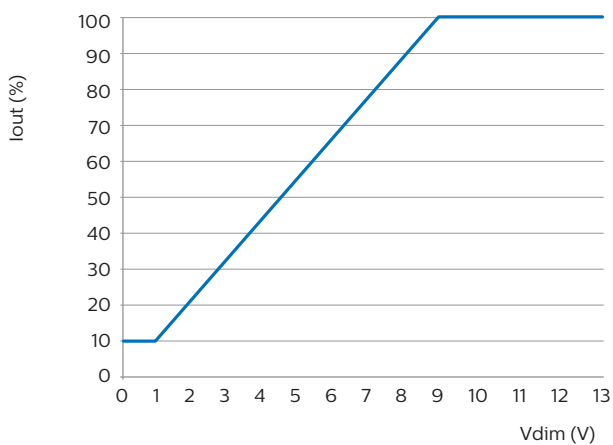
THD versus output power



Lifetime vs Tcase



I_{out} as function of 1-10V interface



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